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GREATER TORONTO EDITION OCTOBER 2002 VOLUME 15 NO 19

GRAPHICS TOOLKIT

Audio, video
jokebox



Easy video
phone calls

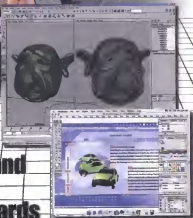


UV cam connects
to printer



test
Lab:

**USB 2.0 and
FIREWIRE
add-on cards**



SAMSUNG

DigitAllenlightenment



Model shown: 151MB

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Ad Deadline Fri., Sept. 24

Distribution begins Mon., Oct. 11

December 2002

Cover story: USB Audio

Lab Test: Headsets

Ad Deadline Fri., Oct. 22

Distribution begins Mon., Nov. 8

January 2003

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5ms	500:1	170°	500:1	500:1	500:1	500:1	500:1	500:1	500:1
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5ms	500:1	170°	500:1	500:1	500:1	500:1	500:1	500:1	500:1
5ms	500:1	170°	500:1	500:1	500:1	500:1	500:1	500:1	500:1

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Technology high and low



FROM THE
MANAGING
EDITOR

I recently had to fill out a questionnaire that asked me to name my "favorite low-tech thing." I wasn't sure what that meant, but already overzealous in responding, I typed in something about good magazines. I was able to cross the questionnaire off my to-do list, but that question lingered in the form of wanting to know what qualifies as high or low technology today.

Magazines (good or bad) are clearly low tech because the final product doesn't need to be plugged in or booted up, but they require a wide range of advanced and sophisticated technologies to get them from the idea stage to the point that they roll off the presses.

For the Redundant Technology Initiative (www.redundant.org), a group of artists based in Sheffield, England, low tech is old tech—the older the better. The group says its artists and technologists can find creative uses for any machine, however low its specifications: 386s, 486s, Ataris, 68000 Macs, 75 MHz Pentiums, as long as they still work.

While the equipment is far from cutting edge—and the Web site sports a deliberately low-tech interface—members of the initiative and its Access Space Local Lab are using it to create quite sophisticated visual, audio, and video art. The equipment is also used to create and host Web sites for community organizations and local business companies.

At the other end of the technology spectrum sits Gravatar (www.gravatar.com) and Xybernat (www.xybernat.com). The companies have integrated Vancouver-based Gravatar's digital photography appli-



An amusement park employee takes photos with the Gravatar/Xybernat Mobile Assistant.

cations with U.S.-based Xybernat's wearable computers. The result is a device for taking photos that can be instantly uploaded to a server or the Internet. The wearable photo studio uses some of the newest technologies available: a professional-standard digital camera, flip-out display, microphones, hand-held bar code scanner, electronic compass/compass capabilities, and wireless Web access.

I saw an earlier version of this setup at a tech gathering here in Vancouver. A Gravatar staffer took photos of attendees, who then used the on-screen keyboard to type in the email address of friends they wanted to send the image to, along with a message. The images were

later downloaded from the portable PC (prior to the wireless features being incorporated) and sent over the Internet. The new device is currently in use as a low-theme picks in the U.S. The photographer scans the subject's bar-code ticket, then takes their photo. At the end of the day, visitors can check out the photos they've requested and (presumably for a fee) have some or all of the images emailed home or printed out.

The Gravatar/Xybernat setup may clearly belong to the high-tech camp, but categorizing the RTI's use of technology is less clear. The old systems are being a commodity into using computers and have spawned creative projects and new commercial ventures, instead of high or low, maybe another adjective, like clever, should be used to describe technologies that refuse to die.

Twenty years from now, when we're tossing our old wearable computers on the scrap heap for the latest shiny implants, I'm sure the folks in Sheffield will be kicked back to get their hands on a portable photo studio.

Let us know what you think.
Megan Johnson
Managing Editor

RTI Editor David Tanaka is on vacation. He returns next issue.



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Flat, bright... and three-pronged

In the "Flat, bright... getting affordable" by Dave Chappelle (TCP Test Lab, August 2005), under the Samsung Syncmaster



1817 review, he says "the power cord is a three-pronging type." It seems it is grounded, or three-prong connector he is talking about, right? Now, this is a technical publication, isn't it?

No name supplied

Dave Chappelle replies: Thanks for your letter. We're sorry you didn't understand, and perhaps we should have explained it

further for those new to computing when we wrote "three-connector type." It's because we didn't mean "typical three connector." A minor point, perhaps, but our readers might have to replace a power cord someday, and proprietary types might be difficult to find.

That's why we mention it.

The price is right

I read about your reply on the September issue of TCP (Reader's Letters). In it, you mentioned that "a one-year-old Canon G2 digital camera was \$9,600 per (each) unit is \$1,280," compared to \$1,289 in retail stores here."

For one thing, Canada Customs might levy import duties and taxes on boxes bought abroad, so those potential expenses

need to be taken into account.

In the Greater Toronto Area, there's a way to bring the G2's retail price closer to the Japanese price. Nine months ago, all the retail stores were selling the G2 at \$1,289 (about \$1,500 including taxes), and some of them were out of stock.

I ended up buying one at a computer parts outlet at Markham, Ont., for \$1,426, including taxes. The same outlet is now selling the camera at \$1,159 while most retail store prices remain unchanged at \$1,289.

Regards,

Johnny Cheung

Too little Genoa

At first I was excited to see a review of Genoa Linux in your publication, as I do

think it is a great system (despite a few kinks, but hey, it is a young OS), but after reading it, I was pretty disappointed.

There was little talk in it about the true power of Genoa, and the advantages it has over various other package management systems (such as RPM) such as being able to set USB variables to eliminate unwanted packages/files.

Also, there was no mention on how Genoa will be one of the first distros to implement GDI-2 with version 1.4 which is expected to come out within a week.

Finally, to get snippets, the scripts for compiling packages are called scripts, not make files.

Cheers,

Paul Roubil



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WHAT'S NEW

By A.P. Staff

In addition to its digital video features, **CANON'S** (www.usa.canon.com) new **Optura ZOOM DV** captures still images which can be printed out on a Canon printer linked by USB cable—a feature more typically found on still digital cameras.



The camera has four recording modes: digital video, 3.33 megapixel photo, motion JPEG (MJPEG), and digital photo (a lower resolution setting suitable for Web and email use). The Direct Print feature allows users to select photos for

printing, crop images, add borders, and print multiple copies if desired. It has 10X optical zoom, image stabilization, and two options for low light shooting.

The **Optura ZOOM DV** has a suggested retail price of **US\$1,899**.

ACD Systems International Inc. (www.acdsystems.com) has released **ACD PhotoStitcher Plug-In**, which allows ACDSee users to make panoramas by joining a series of digital images together.

The software was developed by Sanyo Electric Software and is being distributed by ACD. Once installed, users can access the plug-in through the Extras menu of ACDSee, the company's flagship image-activating program. The plug-in automatically aligns photos to create the panoramic

Spotlight

Player puts video in a handheld

Arcade Technology (www.arcadetek.com) has introduced a handheld device it describes as "theater in the palm." The **Archie Javelin Multimedia 20** combines an MP3 audio player with photo and video viewing capability housed around a 20-lin LCD drive.

The unit measures 114x45x41 mm (4.5x1.7x1.6 in.) and weighs 286 g (10.1 oz.) with the battery pack. It includes a built-in microphone, 1.5-inch LCD screen, and slot for card to connect it to a TV for viewing photos or video.

Users included expansion connectors for the adding devices, such as the Photo Module, for compressing images from memory cards to the hard drive for viewing on the color LCD or on any TV. Archie says it plans to release a mobile unit that can use the device into a digital camera. In September, it will be for



monitoring video clips is also planned, with an unspecified release date.

The device connects to most computers via USB or optional USB 2.0 and FireWire interfaces (sold separately) and is Windows and Mac compatible.

The **Javelin Multimedia 20** has a suggested retail price of **US\$199.95**, or **US\$419.95** bundled with the Photo Module, which is also available separately for **\$129.95**.

Image. Users can adjust the alignment and choose between flat or 360-degree cylindrical formats.

The **ACD PhotoStitcher Plug-In** is available from ACD's Web site for **US\$29.95**.

Das Technology (das.com) has announced the release of **UMail**, software designed to migrate Microsoft Outlook and Outlook Express mail accounts and address books to a Linux server. The program operates as a Webmail system on top of **POSTFIX** mail server, and includes client-side software to extract existing mail and addresses from the desktop-based mail programs and transfer them to UMail on Linux. This allows users to access all of their messages and address book information over the Internet, via a Web browser.



UMail has also been integrated with Das Technology's **LSP**, which migrates Windows NT or 2000-based servers to Linux. According to Das, LSP transfers all users, groups, passwords, shared permissions, permission, Web and FTP directories, and DNS configurations to Linux automatically.

Pioneer Systems Inc. (www.pioneer.com) has added to its line of flat-panel monitors with new 29-inch and 20.1-inch displays. Both models include analogue and digital inputs, and are compatible with an optional Video-EX accessory that adds TV tuner and S-video inputs, for connecting to a DVD player, game console, or for watching TV.



Spotlight



PC-free video phone calls

Valita Inc. (www.valita.com) has announced a device that allows users to make video and voice calls without a PC. The **Blower BM-03** connects to any land-line phone over an analog phone line, says Valita.

So, no fiddling, plugging the phone into the wall and the line from the phone into the back of the blower. It's additional accessories, wiring, or monthly fees are required, according to the company.

The system makes a standard call to any other Blower unit and then the user logs in to the wall-to-line phone. Incoming and outgoing video calls to up to 15 frames per second. The unit—which includes a built-in camera and screen for displaying images at the 1.5 LCD screen—is the called party's screen. The user can then branch video back to the caller, or stop. Video is captured by the built-in camera and audio is transmitted by the phone handset's speaker.

The Blower has a suggested retail price of **\$199.95**, or **\$299.95** for the PC.

The 29-inch display has a built-in USB hub for connecting to keyboards and other devices. It offers 160-degree horizontal and vertical viewing angles, and **SAGA (1,280x1,024)** resolution. It has an estimated price of **US\$1,495**.

The 20.1-inch display offers **UMGA (1,060x1,260)** resolution and 120-degree viewing angles. It carries an estimated price of **US\$1,495**.

Both monitors come with a three-year warranty.

Illustrator vs. CorelDraw: which one is for you?

By Jeff Evans

With the release of the latest version of CorelDraw Graphics Suite in late July, following the release of Adobe Illustrator 10 in January, the two heavyweights in vector illustration software are once again facing off to become the tool of choice for designers, illustrators, and Web publishers.

In this article, we'll assess the strengths and weaknesses of these two flagship illustration applications and long-time foes, and draw our conclusions.

Adobe vs. CorelDraw: the history

John Warnock founded Adobe in 1982, and his company—to stop with Apple—essentially invented the desktop publishing market. The PostScript page description language brought a professional level



Adobe Illustrator 10.0

Price: Adobe, www.adobe.com

Price: \$24, \$24 (upgrade)

of typesetting and image output capability to the personal computer, and Adobe followed up with a profoundly important tool for illustrators when it released its first version of Illustrator in 1986, initially only for the Apple Macintosh.



CorelDraw Graphics Suite 11.0

Price: Corel, www.corel.com

Price: \$26, \$26 (upgrade)

Corel, founded by Michael Cowpland in 1985 to offer desktop publishing solutions for the MS-DOS operating platform, introduced CorelDraw in 1989, aiming to fill the equivalent vector illustration niche on the MS-DOS PC that

Illustrator had pioneered on the Mac.

Over the past 13 years, these two programs have dominated the vector illustration market, and for the last decade have competed head-on in the Windows market. Adobe has cleverly leveraged its comprehensive library of professional graphics and multimedia products, establishing nearly seamless user interface and file compatibility standards across its entire product line. This has led most professional design and publishing firms to standardize on Adobe as a design software platform.

While Corel was distracted during the late '90s by ill-considered forays into Java, Linux, and office suite publishing ventures, Adobe systematically moved into the Windows software market, eating up most of Corel's professional and corporate customer base.

As it stands now, Adobe is unquestionably the stronger company by an order of magnitude, and is also far more widely accepted as a professional software brand. But is Illustrator the better vector illustration program, or does Corel still shine in its original product category, the all-in-one graphics suite?

Other vector graphics software: Deneba Canvas 8

There are plenty of other creativity, design, publishing, and animation programs that are built around vector graphics. They include presentation and project management programs (Microsoft PowerPoint and Visio), 3D animation software (LightWave, Maya, and SoftImage), and computer-aided design (CAD) software. However, the most notable alternative to Adobe Illustrator and CorelDraw for print and Web publishing is Deneba's (www.deneba.com) Canvas 8 for Mac OS or Windows. It's an excellent all-around vector and bitmap design package. A free evaluation version can be downloaded from Deneba's site so you can try before you buy. We looked at the latest evaluation version of Canvas 8, and found very powerful scripting and automation features; improved Mac OS- and Windows X-Platform interfaces; better pixel-painting tools, such as flexible gradient fills; and greatly enhanced typesetting and bezier curve controls. Canvas 8 is technically excellent and enjoyable to use, and worth considering, especially for students, home office or small business users, and pros. Canvas 8 for Mac or PC can be purchased online from Deneba for about \$595 for the shrinkwrapped version (or \$425 for the registered downloaded version), and offers complete online upgrades to registered users of Corel or Adobe products.



—Jeff Evans

Continued on page 14

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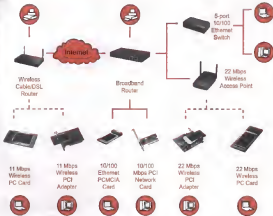


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< GRAPHICS TOOLKIT >

Illustrator vs. CorelDraw

Continued from page 12

files that is very compatible with Photoshop and other Adobe software, and generally good integration with Web publishing standards.

The best new features of version 10.0 include the Symbols support. You can take a complex object, define it as a symbol, store it in a customizable palette, then use it multiple times, in one or more documents. When the symbol is modified or replaced, every instance of its use in the document is likewise changed. A great production process improvement.

A number of illustration tools have been introduced or improved. Among the coolest are a lens flare spread effect, and Liquify brushes that quickly create complex textured shapes from simple originals.

Of special interest to corporate print or Web publishers and legal or institutional users, is the ability to easily link Illustrator's templates to a database. For the small design house or small business, this feature is less useful than it might be, as it requires some expertise with Access or Microsoft Visual Basic. However, for companies with database programming available, this feature alone makes Illustrator 10.0 worth the purchase.

This version also makes life easier in some ways for Web designers, as it integrates HTML, vector, and bitmaps images in a single composite image, allowing the best combination of these three information formats. The result can be striking but efficiently compact graphics downloads. However, Illustrator still lacks integral, easy-to-use tools for creating common Web effects such as rollovers or interstitions. This lack is a significant omission and, we hope, a top priority to fix for the next version.

Illustrator is the undoubted illustration software standard for professional designers. It still has a fairly steep learning curve, and a user interface and features set that is complex and time consuming to master at the pro level. However, in our experience it is extremely stable and bug free on both the Mac and the PC. As well, third-party publishers offer a wide range of "how to" books for this application. Tech support was rarely needed, but when it was, it was fast and expert. Adobe offers 90 days of phone support on registration, plus additional pay-as-you-go or annual support contracts.

About the only real drawback with Illustrator for the student or semi-pro is its price, which remains at a professionally high \$575. For upgrades from an

Continued on page 18

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Illustrator vs. CorelDraw

Continued from page 14

earlier version, it is about \$270. One relatively economical way for a small business to acquire Illustrator is as part of an Adobe bundle such as the Digital Video Collection, which includes Illustrator, Photoshop, Premiere, and After Effects, for about \$1,800.

CorelDraw Graphics Suite 11.0

CorelDraw quickly dominated the PC graphics software market when it was released in 1989, as it offered functionality and relative ease of use that previously had only been seen in Mac software. It also handled many features, utilities, clip art images, and fonts in one moderately priced package. However, from its position as the standard for professional illustration software on the PC, a decade ago, Corel has been relegated to the semi-pro and student market by Adobe Illustrator.

On the desktop, CorelDraw has also had a deserved reputation for bugginess in its first release of every new version. We received a beta of CorelDraw Graphics Suite 11.0, and it lived up to tradition, being quite slow and prone to freezing.

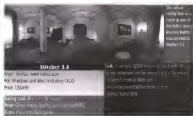
Aside from that warning, however,

nearly everything else about the new suite is very impressive. Once again, the user interface is simpler than Illustrator, and fully user-customizable. This remains an easier program to learn and manage than Illustrator. There is support for pressure-sensitive tablets, with new stroke and blur brush effects tools.

The suite also comes with an improved version of Corel Photo Paint, with new features for creating Web pages: rollover animations, sampler marking tools, and geometric picture stitching. As well, Corel R.A.V.E., a vector animation application, has been optimized for compatibility with the Flash animation format. It is a lot of fun to use, and now that it has automated animation capability applied to text, you can create fairly complex Web animations involving movement, distortion, and simple shape morphing.

Corel's price remains its ease of use, flexibility, and value. On the one side, the first version we tested is slow, especially on an older PC, and slightly unstable. It results for \$750, or \$550 when upgrading from a competitor's software, or \$290 when upgrading from an earlier version of the suite. ☐

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By Justin Siemens

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GRAPHICS TOOLKIT

Tablets: the natural way to draw

Continued from page 26

most artist's head-eye-grip feedback loop. This combination of LCD screen and graphics tablet is now being offered to a wider market, as it is incorporated in the new Microsoft Tablet PC platform, due to be officially launched on Nov 7.

The drivers running Tablet PC are ultralight (between 1.5 and 2 kg, or 3.5 to 4.5 lb) notebooks with a tablet LCD screen. They are the first really portable handheld drawing and handwriting computers to be available at something near mass-market prices.

A short history of tablets

The first electronic graphics tablet was invented in 1964 by M.R. Davis and T.D. Elliott at the RAND Corp., a research "think tank" largely supported by U.S. government grants (1964 was also the year Douglas Engelbart developed his first working computer mouse).

Tablets were seen as an improvement over imprecise commands via a key-board, and were intended for use both as pointing devices for selecting menu options, and as drawing or drafting tools. Over the next 35 years, many companies developed tablets as input devices for computers, including Tekon, Korea, CalComp, and Canada's Analog Research Inc., which developed the Easel drawing tablet for the Acage computer. The main customer groups for tablets were designers, artists, engineers (for CAD), educators, teachers, and students.

I started or used about 30 tablet models between 1984 and 1990, and found them very productive for animation, tracing, sketching, and menu selection in the days before USB; tablet installation on a PC using the serial and parallel port was often a problem, particularly with the bulky MS-DOS and early versions of Windows. The main graphics software table used with a tablet included Adobe Painter "natural media" software (recently purchased by Corel and added to its

existing product), CorelDraw, and Adobe Photoshop and Illustrator.

On the Mac, of course, attaching a tablet was generally much easier as with everything else Mac-related.

Wacom

By the mid-90s, though, most of the tablet makers dropped out of the market, and it became apparent that one company, Wacom (wacom.com) was winning the race to create the best artist's tablets.

In pressure-sensitive devices were simply the best: easy to install, very accurate and responsive, beautifully designed ergonomically, and easy to integrate with all the common operating systems of Mac and Windows OSes, and art and design software. Wacom produced tablets in a wide range of sizes (from 4x5-inch to 12x18-inch) starting at about \$149.

Around 1996, Wacom also pioneered the LCD graphics tablet, with its PL500 model. Although very expensive (over \$5,000 initially), the PL500 showed the way of the future: drawing and painting directly on a glowing computer screen that you could hold like a sketchbook or lay on a desk like a page of paper. The PL500's screen was still attached to a computer, so it wasn't really portable (like a sketchbook), but it was still a wonderful idea. More recently, Wacom introduced the Cintiq—an LCD screen (15-inch or 18-inch) with a Wacom tablet grid underneath the screen, a USB connection, and software for Mac or PC. A lovely drawing, design, and pointing tool, for about \$2,800.

Tablet PC

This summer, Microsoft and Windows notebook manufacturing partners, such as Acer, Viewsonic, and Toshiba, began previewing prototypes of the new Tablet PC (www.microsoft.com/windows/tabletPC), a Microsoft-defined standard for ultralight notebooks with an LCD tablet screen for pen input, and a special version of Microsoft's Windows XP operating sys-

tem optimized for pen computing.

The Tablet PC is aimed at segments of the business computing market—like architecture, manufacturing, transportation, health care, security, courts, sales, education and training, marketing, and "border warriors" who move from meeting to meeting—where people need to be able to walk around while using their PCs.

The Tablet PC is not designed specifically for the communication and design market, but it is beautifully suited for that niche. Although none of the Tablet PC makers we talked to would tell us where the tablet technology in their Tablet PCs came from, we found links on the OEM engineering section of the Wacom site that referred to Tablet PC. At least some models of Tablet PC appear to be using Wacom technology. This is a good thing: the Tablet PC pens, for example, are very well designed and comfortable to use.

The Tablet PC is getting attention from professional designers, even before its official release. According to architect and educator H. Edward Goldberg, of Towson University in Maryland, "Tablet PCs and direct-view LCDs may become an integral part of preliminary [architectural and engineering] design and change the face of creative computing. The software tools have emerged just as a new form of computing outdoors."

"With the Windows XP Tablet PC software coming later this year, these Tablet PCs and direct-view LCDs, combined with voice dictation and handwriting recognition, should open the way to more natural drawing input."

"If you want to draw, or even more so sketch, today's CAD software resorts to such compromises as object snapping, which automatically forces the cursor to snap onto an object when the cursor is within a specified pixel range. Direct-draw input eliminates this disconnect and lets you design and manipulate the screen image in a much more natural manner."

Project Galgo

In addition to a long list of Tablet PC hardware makers, Microsoft has lined up many software vendors that are developing versions of their applications optimized for the Tablet PC interface.

Corel (www.corel.com/tablet) has shown its own Tablet PC software, code-named Galgo (for Collaborative Interactive Graphics on the GO) □

—Jeff Evans

Any other tablets out there?

With two million (not counting) tablets sold, Wacom (www.wacom.com) has become the dominant brand in the tablet market: to the point where it is hard to find any available alternatives. CalComp, which originated in the '60s as a division of the Lockheed aerospace company, developed a line of tablets that competed with Wacom in the graphic arts market for a while. Currently, though, the CalComp company seems to have pulled back into the engineering market, with a line of very large-format tablets for CAD applications. And, although these CalComp products are for sale online, the CalComp Web site currently only refers to the company's large-format colour printing supplies.

Photoshop guides for your graphics bookshelf

By Keith Schwergil-Roberts

With the latest release of Adobe's flagship image-editing software, Photoshop 7.0, comes a wave of new books to teach pros and neophytes alike some new ways to break their digital images.

Photoshop 7 Magic



This book is aimed squarely at people who are already familiar with Photoshop but who want to add some new professional tricks to their repertoire. While ostensibly aimed at users of the latest release, it seems Photoshop 7.0 is the "sweet spot" for this book as almost all of the projects covered in it could be accomplished using an earlier version (though, Photoshop 7.0 occasionally provides easier ways of doing a task).

The book takes on 35 distinct projects, including playing with the new brush engine to create brush-stroke effects (one of the few sections focused exclusively on Photoshop 7.0); creating "still-life" images using photos; instillating printing; creating seamless patterns using displacement maps to create believable 3D effects; and manipulating the placement of people into new scenes via the Extract Image tool.

It also has a section on using Photoshop to create Web pages and elements, but as a Webmaster I found it—not surprisingly—heavily skewed in

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Some fast fixes for your bag of image-editing tricks

By Frank Lark

Digital technology has made photography more convenient, but it can't guarantee that every photo will turn out perfectly. Too much light, too little light, poor-quality reproduction—these and many other faults continue to plague our pics.

On the other hand, digital tools do make it easier to repair and upgrade the photos that don't quite work out. Here are some tricks, well-known to the professionals, that anyone can easily apply to their own images.

Contrast and colour

Before you even think about adjusting the colour or brightness levels of your images, consider adjusting your monitor. You can't anticipate the quality of every monitor or printer that will ever be used to view your pics, but if your own setup is way off the beaten track, you can be sure that very few people are going to see your work at its best.

The professional approach is to calibrate your entire system. Adobe products generally include the Adobe Gamma utility, which modifies your system-wide colour setting. Unfortunately, the effect may not suit all applications (in darker setting tends to be more visible), and is difficult to reverse or bypass once installed.

A less intrusive solution is to adjust your graphics software. Most graphics apps have at least a simple gamma adjustment. All you need is a bit of patience and a known colour-correct reference image to guide you.

You'll find several on Bill Harris's Images Unlimited page at www.mad-spring.com/~wharris/col.htm, and a more extensive database within the Vera PhotoWorks pages at www.veera.com/under/Methods/

All you need to do is set your system so the image looks right. Then if you get an image that still looks overly light or dark, you can be confident that it actually needs fixing.

The "ideal" image has at least one area

of pure white (255,255,255 in RGB terms) and another of pure black (0,0,0)—which is typically what your software's Auto Contrast function will tend to ensure. However, this won't necessarily give you exactly the desired range of shades in between.

Most often, you'll want to ensure detail that's hidden in the darkest or brightest areas. The RGB curve in the Curves dialog box gives you total control over the relationship between different shades in your image. [In Photoshop Elements 2.0, the RGB Panel and Adjust Layering tools do a remarkably good job of applying two basic curves, at the expense of detailed control.]

In the sample image, the hidden motorcycle actually has a lot of detail that's not currently visible. Boosting the dark end of the RGB curve can bring this out. Naturally, there's a price: a washed-out background at least, or some really weird effects if you try to warp the RGB curve too much.

A reasonable compromise is to leave

the bike a bit dark. Or you can cheat. In this particular case, it's easy: just select the lower half of the image before applying your curve. The result still looks a bit flat, but combines the best of both light and dark versions.

Alternatively, you could crop out the bike entirely, so it has now become quite a useful image on its own. Or you could get fancy: apply your RGB curve on a new adjustment layer, then create a gradient on the Layer Mask to make the effect strongest toward the bottom of the image.

Colour casts are handled similarly, using curves. Old photos can be accurately yellow when scanned, and photos taken under fluorescent lights are a hideous greenish-blue. Sometimes, an Auto Colour tool can dislodge the cast, but only if it can guess correctly what the image is supposed to look like.

The trick is knowing that colour-neutral areas, including white, grey and black, should all have equal amounts of red, green and blue. You can check this

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Some Hot Fixes

Continued from page 35

A yellow cast will show up as a deficiency in the complementary colors, blue. To fix it, open the Curves dialog and bend the "light" end of the blue curve until you add roughly equal RGB values in the white area. (You'll probably need to go down the dark end of the curve, to avoid getting bluish shadows.) The improvement can seem minuscule.

The Color Cast command in Photoshop Elements simplifies the process. It lets you click on any point that you think should be color-neutral, then adjusts the colors to match it, so.

Retouching

There are a number of forms of detailed damage that can affect an image, and may require retouching. However, they all need the same technique: primarily, a judicious use of the Rubber Stamp or Clone tools.

If the damage happens to be colorful, no much the better. You can then use colour Channels (provided your software allows them) to isolate the problem.

A lost-glass scenario might be a black and white photo that's had cranberry

jauce spilled on it. Display the red channel, and the blueness would become glaringly obvious—and easy to fix. You could paint it out using the Clone tool, perhaps cloning from identical areas in another colour channel. Or, since the image is monochrome, you might be able to discard the red channel entirely.

A similar approach can help with the common use of "red-eye" in this case, the problem is literally an area of red pixels. Chances are, therefore, that it appears almost entirely in the red channel of an RGB image. Working in the red channel, you can simply paint the pixels with black, or use the Burn tool to darken them.

You can also use a Red-eye brush, but that won't necessarily do a better job. Red-eye tools selectively replace the red pixels, or simply paint with black, but either way you still need to check that you're hitting exactly the right pixels.

Colour channels are a particular boon to the nervous novice. You can do an amazing amount of damage in a single channel without having it show in the final image.

Here's another example: If you're trying to sharpen an image, say a portrait of someone's face, check the colour chan-

nels to find the one with the least detail—often red. You can then apply a heavy Unsharp Mask to this one channel, without bringing out any unpleasant blueness. If the image has that blocky, over-compressed look, you can pick the channel with the worst JPEG artifacts, usually blue, and simply blur them out with the Blur tool.

If you're adventurous (or desperate), you can even try changing colour modes, to CMYK or LAB, which have quite different sets of colour channels that may show up exactly the problem you're trying to repair.

In Photoshop, conversations between RGB, CMYK, and LAB are virtually lossless. Other programs, such as Corel PhotoPaint, seem to produce colour shifts when you change modes, so you'll need to be more careful.

Panorama

After all the heavy repair work, why not have a bit of pure fun? Digital cameras make it tempting to shoot wide panoramas: a series of pictures that can later be stitched together. Photoshop Elements 2.0 and Corel PhotoPaint both have automated tools for this, but doing the job manually really isn't all that difficult, and often much better control.

First, load up all the images you want to join. Check their sizes, then create a single new file that's a bit bigger than their total width, and a bit taller than the largest height. Paste copies of each original image into the new blank one, then close the originals to begin some working memory.

In Photoshop, each of the joined

images ends up on its own layer. In other programs, they'll likely appear as separate objects. In either case, you now have the freedom to move them around and watch them up.

In particular, you can apply colour and contrast settings, as discussed earlier, to move out any variations between the separate images. Also, you can rotate the images so that they line up properly.

Then comes the real trick: finding the edges. In Photoshop, you can do this by adding a Layer Mask to the appropriate layers, then filling it with a horizontal gradient. Corel PhotoPaint has an excellent interactive transparency tool that lets you draw a transparency gradient directly on any object.

Make the uppermost image transparent for most of the width of each overlap. Zoom in a bit on the overlapped area and you'll find you can easily position the transparent image over the underlying one, nudging it into perfect registration using the cursor keys. The two images literally "snap" together when you hit the right spot.

You can now Flatten Image (or equivalent) to combine the layers (or objects), then crop away any unwanted black ground. Use Dodge and Burn to emphasize any remaining variations in brightness, and you've got a virtually seamless panorama.

The same approach works for joining any type of images. For example, if you're scanning something that's too large for the bed of your scanner, try to arrange the individual scans so you can join along areas of limited detail, and you'll be able to hide the seams completely. □

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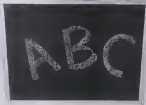
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Hands On

Lab Test • Hardware Evaluations • Software & CD-ROM Reviews

Hooking up

New cards connect peripherals to your computer

By Sean Connolly

No matter how loaded your computer is, you're never going to get absolutely everything you need right into it, nor would you want to: digital cameras, MP3 players, printers, and more are all things you'll need to plug in. In the past, these external devices usually hooked up to your PC via its serial or parallel connectors, but those two trusty ports are giving way to newer, much faster interfaces like USB and FireWire.

This month we look at the newest cards available for adding FireWire and USB 2.0 interfaces to your PC.

Note on pricing

We received most of the products reviewed this month directly from the U.S. with pricing provided as U.S. funds. The Canadian pricing we have given was converted from the U.S. pricing, and as such is subject to change as the exchange rate varies; there will also likely be fluctuation from store to store and region to region.



The pricing as given is intended to give readers an idea of the price to expect rather than as a definitive price point.

FireWire

Officially known as IEEE 1394, this connectivity standard is better known by the much catchier FireWire, named after its relatively blazing speed. When it was introduced, it was designed as a plug-

and-play replacement for the SCSI interface that would compete with the much slower USB 1.1 standard (FireWire checks in at 400 Mbps compared to USB 1.1's paltry 12 Mbps).

Though it started its life as a Macintosh technology, FireWire has since migrated over to the world of the Windows-based PC, especially for video-related hardware.

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I'm InTouch
remote access
to your PC

By Sean Connolly

Canada's own 01 Connectique wants to help you stay in touch with all of your information while you're on the go, and it has just the software to make that happen.

I'm InTouch 3.01

From: 01 Connectique, www.01connectique.com
Suggested fee: \$9.95 (or \$55 per year)

The InTouch is an application you install on your PC, which acts as a client to the outside world. It reports its IP address to a server at 01 Connectique. Then, when you want to access your data while you're away from your PC, you simply point any Web browser to the 01 Connectique server, and shortly yourself with a username and password. You're then redirected to your data using a peer-to-peer connection with your PC.

That's not a typo: you can use "any" Web browser! The InTouch eliminates the need for special clients, which means you

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Hooking up

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and for external hard drives.

FireWire for desktop PCs

To add any of these cards to your desktop system, you'll need one free PCI slot. If you're planning to add the card to a Windows-based system with Windows 2000 or higher, you probably won't need to worry about drivers, because FireWire driver support should be native (unless you're using a stripped-down version of the OS custom-configured by your system vendor).

Installation should be very simple: find the available PCI slot, insert the card, then start your machine. Of course, ask for assistance if you're not comfortable messing around inside your computer, but those who have installed any hardware in the past should have no problem here.

We tested one PCI FireWire card in a 2 GHz Pentium 4 system with 2GB of DDR SDRAM and a 40 GB ATA/100 hard drive. The system was running Windows XP Professional.

Adapter FireConnect 4300

From Adapter Inc., www.adapter.com

Estimated price: \$29 (converted from US\$29)



- Adds three external FireWire ports.
- Comes bundled with MG VideoWin 4.
- Compatible with Windows 98SE, Me, 2000, XP, and Mac OS 9.4 and higher.
- Two-year warranty.

The FireConnect 4300 is pretty stripped-down in comparison to the premium model—the US\$80 FireConnect Plus, which comes with DVD authoring software in the box. This one is no slouch, though; it's the same hardware with the same capabilities, and the bundle still comes with a six-to-four-pin cable and video-editing software. As we expected, one Windows XP box recognized the card automatically, and we were transferring data within seconds. If you aren't planning to start burning DVDs, this card has all the goods you need to get going with FireWire drives.

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above, but also hooks the two ports it has off onto a single, allowing you to use it in either PC Card slot without worrying about what's in the other slot. After insertion, both the Master drive and the DV cam were recognized and functioned as they should. There were a few dropped frames when capturing video to the internal hard drive, but that problem disappeared when capturing to the external drive. It would be nice to have more FireWire ports, but the card works just fine when used with a hub, so it's a minor consideration.

Keyspan FCB-1

From: Interlyn Inc. www.keyspan.com
Estimated price: \$13 (converted from US\$19)



- Adds one FireWire port to PC Card slot.
- Compatible with Windows NTSE, Me, 2000, SP, and Mac OS 8.6 and higher.
- Comes bundled with MAG VideoWave II SE video-editing software and a ten-foot-long FireWire cable.
- Five-year warranty.


The PC Card FireWire adapter from Keyspan works just fine, but comes with a caveat. Though it is cheaper than the others, it also only comes with one port. That port is on a dongle, which means you shouldn't have any problems when using other PC Cards at the same time. The problem is that we weren't able to use the card with our Belkin FireWire hub, which means that we were limited to using one device at a time. That said, the install was very quick and clean on our Windows 2000 notebook, and both the hard drive and DV cam were recognized and instantly usable almost immediately after inserting the card. The rest of Keyspan's products that we tested did mesh work just fine, so this one is really more an annoyance than anything. If you only have to connect one thing at a time it will work just fine, but you'll get better value going with one of the multi-port cards until Keyspan introduces one of its own.

USB 2.0

The Universal Serial Bus, or USB, has become a standard on pretty much every

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Hooking up

Continued from page 49

new PC and motherboard. It's easy to see why: the port is plug-and-play, allowing you to add fairly powerful hardware to your computer without having to open up the case, and in many instances, without having to restart the computer. The most common version of USB as most computers is USB 1.1, a slightly older spec that transfers data at a maximum of 12 Mbps.

USB 2.0, introduced in mid-2001 but not quite ready for prime-time until this

USB 1.1, but changes the controller chip to bump the speed up to a blurring 480 Mbps—about 40 times the speed of the previous version.

Many of these cards will function just fine with drivers for USB 1.1, though at the slower USB 1.1 speed. When USB 2.0 products were introduced, there were some driver issues presenting many of the cards from being used with Windows 98SE and Me, but most of those issues have now been sorted out, allowing these cards to work smoothly with Windows 98SE and higher.

If you have a number of older USB 1.1 devices, don't fret: they'll still work under USB 2.0, but at the slower speed. This is important to note if you plan to use any USB hubs, because any USB 2.0 devices plugged into a USB 1.1 hub will function at only 12 Mbps, even if that hub is plugged into a USB 2.0 port on the computer.

You know what they say about your chain only being as strong as its weakest link? Well, it's the same case here, but in this case your chain is only so fast as its slowest link, for everything upstream. If you're stuck with a whole pile of USB 1.1 devices plugged through a full-speed USB 2.0 hub, the one bit of good news is that all of your USB 1.1 devices will be able to achieve maximum throughput. They'll have the full 480 Mbps to dilly up rather than sharing 12 Mbps.

USB 2.0 for desktop PCs

Because of the squabbles over the USB 2.0 hardware and software standards, there won't be any native USB 2.0 support in your operating system if you're using the first version of Windows XP or anything that came before it. (Though there may be support in the next revision of XP, we won't truly believe it until we see it.) Because of that, to add a USB card to your system, you'll need to use a win- and-based driver install. For Windows 2000 and XP it should be fairly quick and easy, though earlier versions of Windows may be trickier. All cards in this category will require one free PCI slot.

We tested three cards using the same desktop PC used for the FireWire cards, above, along with a Maxtor 3000LE external hard drive.

Adaptec USB2000 390LP

from Adaptec Inc. www.adaptec.com

Estimated price: \$39 (converted from US\$39)



- Adds one internal and three internal USB 2.0 ports
- Compatible with Windows 98SE, Me, 2000, SP, and Mac OS 9.0.4 and higher
- Free-year warranty
- Six-port version (USB2000 390L) with five external and one internal ports available for \$150

In addition to its FireWire line, Adaptec features a USB 2.0 product line with a number of family members. The 390LP is one of the more value-oriented models in the line, but it still has four ports in a three-and-one configuration, which is nice for users with USB devices that connect internally. The card fired up fine and was working almost immediately. We had our external hard drive connected and transferring data soon after that. If you aren't planning to connect a lot of devices, this one makes a great choice, but those who need more ports can spend a bit more and get the six-port version instead.

Billion P34220

from Billion Corp. www.billioncorp.com

Estimated price: \$10 (converted from US\$10)



- Adds one internal and four internal USB 2.0 ports
- Compatible with Windows 98SE, Me, 2000, and XP

Continued on page 52

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Hooking up

Continued from page 58

- ports (all external).
 - Compatible with Windows ME, NT, 2000, and XP.
 - Internal floppy-sized power connector is one pin's pointing mostly but-powered design.
 - Cables bundled with Unidisk/Grade 4.2.
 - Used Photo-Linker My Custom Adapter. Used Cool 300 panorama software, and a six-to-four pin FireWire cable.
 - Adverse warranty.
- As with the Adaptec combocard, the Belkin combo required a reboot before we had full functionality, but as soon as we did that, we were able to transfer data between our two external hard drives at quite a clip. Though the Belkin card has fewer ports overall, it also comes in at a slightly more attractive price point, and sports a lifetime warranty. If you just need a few of each type of port, the Belkin solution is a great choice.

OrangeLink+

From Orange Micro Inc., www.orangeinc.com
 (Estimated price: \$200; converted from US\$ 600)



- Adds four USB 2.0 (three external, one internal) and three FireWire (two external, one internal) ports.
- Compatible with Windows ME, NT, 2000, XP, and Mac OS X and higher (will work with Mac OS 9 but only in USB 1.1 mode).
- Comes with one six-to-four pin FireWire cable and one USB cable.
- Bundled with Unidisk/Grade 4.2 (Windows) and VFW Pro (Mac) video-editing software.

Orange Micro was one of the first out of the gate with USB 2.0 cards. The company has developed a pretty thorough line of cards in both the USB 2.0 and FireWire space, and this is Orange Micro's new combocard. Because we weren't able to get our hands on this card until just before deadline, we weren't able to test it through the full batch of trials—however, it installed on our Windows XP system just fine, and items we connected through the card functioned as anticipated. (For more information on Orange Micro's other offerings in the USB and FireWire categories, check out the company Web site, at www.orangeinc.com.)

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Building your business Web site

Whether you do it yourself or hire a pro, there are a few things to consider when creating an online presence.



Of the numerous questions we receive, one of the most frequently asked questions is "How do I pick a Web site design or host for my business?" We at Technology Reviewer Dave Chappelle are fond of the T.R.P. Test Lab long enough to find some answers for our readers. —Editor

De Drupe Champsille

After years of avoiding the inevitable, you've finally decided to create an online presence for your business. Where do you start? First, you need to understand that there are two main components to the

Internet presence requires design and hosting. Other secondary components are important, but for now we'll concentrate on these two.

It's common knowledge that small to medium size enterprises represent the largest portion of the Canadian business market. So, there are plenty of services catering to businesses in this category that want an Internet presence—from "free" to price-it-no-object offerings. We've looked at a few

Case Studies

For those with very little capital, you can find free or almost-free Web hosting.

You can begin with the free Web space most ISPs (Internet service providers) give their subscribers. It's usually at least 5 MB, which is enough to store some HTML files and possibly a JPEG image or two.

However, personal Web space offered by EIPs is a threat for showing off things

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Symantec
streamlines
network
security

By Dave Chappelle

Recognizing that few businesses have staff dedicated full-time to network security, Symantec has integrated multifunction security solutions into a single hardware appliance.



Semantics Gateway Security

From: supravin@uwaterloo.ca

Estimated price range: \$11,500 to \$24,900

With the Gateway Security appliance, Symantec appears to have made a leap forward in network security administration: Regardless of the size of the network, it locates the central management

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Continued from page 63

Or you can learn HTML. It's even easier, and you can impress your friends with your knowledge. By conducting a search on "HTML tutorial" we found HTMLGoodies (www.htmlgoodies.com) and Make a Web Site (www.makesite.com). From these two sites and others we learned enough HTML to create a simple site on our own. For a comprehensive list of HTML tutorials see *perfectionists.com* (www.perfectionists.com).

If you want fancy graphics, lots of eye-catching movement, and plenty of distractions on your page, doing it on plain HTML will take a lot of time. An easier way to that end is learning Macromedia Flash (www.macromedia.com). A free trial version of the software can be downloaded from the company's site.

You should also learn something about Web site design and use. Start by visiting Jakob Nielsen's site (www.useit.com). Nielsen is the absolute authority on Web site design and usability. Another good design tutorial site is also.net (www.also.net).

Debra Wenzel Flinders has written

a funny book exploring the fundamentals of good design by exposing really bad design. The book is *Web Sites That Suck* and the site is, of course, *websitesuck.com*. If you need the book and/or just the site, you'll see examples similar to your favorite sites, your friend's sites, and other popular ones that you might have thought were good until Flinders pointed out the flaws.

Professional design

However, sometimes it's cheaper—and doesn't always take as long—as to hire a professional.

"Web developers are a dime a dozen" says Jeremy Stevens of DS Design (www.dsdesign.com). "While anyone can use a Web builder to add and paste elements into their Web site, the visual impact, interface cleanliness, and use of color (or for a professional corporate Web presence a best bet to professional, accessible, and related design team in conjunction with your development team."

So how do you choose a Web designer? The temptation to jump on the Internet bandwagon, overpaid, and listen to a supposed Web guru can be

strong, especially for business people who aren't Web savvy. Start by asking yourself what you want from a Web site.

Dino Tapania of Media Dog Productions (www.mediadog.net) advises, "Before rushing out and going for what you or others think is cool, ask yourself 'What do I specifically need' and 'In what order do I need to get it.' Any potential Web designer will most likely ask you these questions as well, and if you have the answers ready it will make your initial contact that much easier."

Stevens says, "Be prepared before you call anyone. Have a solid plan and wish list for your corporate Web presence before you do anything."

Next, ask everybody you know who has a Web site how they made their design choices, how much the design work cost, and how much time was required to complete it. Check the site, its use of color, and note your likes and dislikes. Then check the site of the design company behind it to learn about its design philosophy and what areas it specializes in. A successful Web design firm should also have links to clients' pages. You can ask these clients directly about their experi-

ence working with the designers.

Having an idea of the type of site you want helps when communicating with the design company. "Are you assigned a personal point of contact? You don't want to end up at the small company dealing with a large Web development team or you may always have difficulty trying to get things done on time and on budget," says Tapania. "Make sure that your Web team doesn't treat you like a number, and that you have access to all work in progress."

Stevens agrees. "When you call the design/development firm, ask for the creative director or lead project manager. Titles vary from company to company, but make sure you speak to a person in a senior, decision-making position. That way you'll have direct access to the person with final say on your price. The senior exec may not directly handle your project, but putting yourself in contact with them gives you more leverage when negotiating your position as a buyer."

Ask about each firm's experience designing the type of site you prefer. Have they performed other functions.

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such as back and database, forms, autoresponders, and shopping cart design? How much do they know about Web site marketing?

Then become a choosy shopper. While it's a poorly kept industry secret that having your site appear first in a search engine query requires payment, some firms will guarantee top 10 or top 20 placement with major search engines and directories.

Expanso suggests asking for guarantees on delivery date and site functionality. Steven recommends obtaining quotes from other firms to ensure the one you're interested in is projecting reasonable timelines and cost.

Care and control

At the very least, your Web site is a worldwide advertisement that needs for your 24 hours a day, seven days a week, so it will require maintenance. As Roger "Chicken" Butterworth (@butterworth) says: "The question of your sign is a direct indication of the quality of service you provide."

If you have to call or email the design-

er every time you want to change something on your Web site, you're going to be spending serious time and money than necessary.

"In response to customer requests for complete access and control, we designed an administration page, can inventory the interface for each company," says Al Redpath of Outrageous Creations (www.OutrageousCreations.com).

From this admin page it's possible to add, edit, and delete products and categories, to move categories around and create subcategories, and upload and change product images, all in one transaction. Page content can be changed and changes will appear instantly.

Outrageous Creations also puts a complete mailing list system at its clients' disposal, one without all the junk added by commercial mailing lists such as Yahoo! and eGroups. If a featured product is to be sent, the system automatically generates an HTML e-mail with product thumbnails and links to product pages.

Redpath explains: "The whole system is completely customizable too. It can be hooked up to any shopping cart system including Cart2, iCart, Cubegear, any open cart system, etc. All elements are

modular, so if you don't like the layout of the list-products pages, it can be switched out and replaced with a completely different layout. The same goes for the Show Product view; it can be set up to look and act like any style of online store."

For companies without the need for constant product updating, perhaps an automatic updater is the way to go. Says

Symantec streamlines network security

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of all security functions in one box.

Designed for small to medium-size businesses, the appliance incorporates the main security preoccupations of system administrators: access control, firewall, anti-virus, intrusion detection, content filtering, and virtual private network (VPN) features.

Other wonders have "partnership" and "arrangements" with competing companies, that ask anybody who's ever tried to install and maintain four or five different security applications on the same network, and you'll get an awful about the difficulties. Having everything in the same box made by the same company can make network security management markedly easier, as all of the

features are designed to work together. An integrated multifunction security appliance also helps combat so-called "blended threats," such as the recent Nimda virus, which attacked both clients and servers and propagated in more than one way.

The Symantec appliances fit in a standard 19-inch rack. Up to eight units can be arranged in a load-balancing configuration for larger networks. A Management Console interface can be installed on a local or remote PC, providing one interface for control and identical configuration of a network, from one to 1,000 nodes.

This feature alone greatly simplifies managing the security of a network of any size. Remote control is via the

(Continued on page 68)

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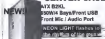
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« PLATFORM NEWS »

Apple gets PowerMac G4 right

Continued from page 32

back. The speaker has moved to the top of the unit, and the CD drives are now covered by a metal panel, but in most respects these new machines still remain like the Quicksilver case design.

There remain three standard configurations: a dual-867 MHz G4, dual-1 GHz G4, and dual 1.25 GHz G4 models. All PowerMacs now feature four RAM slots for a maximum of 2 GB of RAM, four hard drive bays for almost half a terabyte of storage (480 GB using four 120 GB drives), and space for two optical drives in the front of the case. This space means there is now room for a SuperDrive and a CD-RW drive—a much requested feature since the debut of this case design.

The benefit of dual optical drives is that you can copy the CD in one drive using the burner in the other, which saves you from having to image the CD to your hard drive first. It would also allow you to listen to music while burning a data CD in the background.

The standard video cards maintain the dual-display capability, but have been significantly upgraded. The base model of the PowerMac G4 now ships with a GeForce 4MX, which was previously standard only in the top-of-the-line model. However, this new GeForce 4MX includes only 32 MB of video RAM, somewhat clipping any performance benefits it had over the old 32 MB Radeon 7500. The other two PowerMacs include ATI's very impressive Radeon 9000 Pro. These new video cards include a more substantial 64 MB of video RAM. The 128 MB GeForce 4Ti is still available as a build-to-order option.

The G4 towers still have four PCI slots and one AGP slot for expansion, but now sport a new system bus similar to Apple's Xserve rack-mount server. Bus speeds run at 133 MHz on the lowest model and 167 MHz on the other two models, with support for DDR 2100 and DDR 2280 RAM, a first for the Mac.

Between the dual processors and the DDR RAM bus, the new pro line will perform at more than double the speed of the consumer line, which finally justifies the price gap. The prices for the new towers in Canada are: \$2,699 for the dual-867 MHz G4 with 256 MB RAM, 60 GB hard drive, 1 MB Level-3 cache, and a GeForce 4 MX 32 MB card; \$3,999 for the dual-1 GHz G4 with 256 MB

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Apple gets PowerMac G4 right
Continued from page 24

RAM, 80 GB hard drive, 1 MB Level-3 cache, and a Radeon 9000 Pro 64 MB card, and \$3,199 for a dual 1.25 GHz G4 with 512 MB RAM, 120 GB hard drive, 2 MB Level-1 cache, and an ATI Radeon 9000 Pro 64MB card.

As you may have noticed, the prices have increased by several hundred dollars on each model, but this is due in part to the falling Canadian dollar. The DVD burning SuperDrive remains standard on the top two models, while the base model includes a CD-RW/DVD combo that can play but not burn DVD media.

The Apple display lineup—15-inch, 17-inch, 22-inch, and 23-inch LCDs—has not changed at this time. We still await the release of a 17-inch widescreen LCD for the PowerMac line. In the meantime, you can get \$300 or \$350 cash back by mail if you purchase a PowerMac and an Apple display together (depends on configuration).

The distinction between consumer and pro becomes clear when comparing the G4 iMac to the new PowerMac. The top 15-inch iMac costs \$2,799 and includes an 800 MHz G4, no Level-2

cache, and a GeForce 2MX card. For \$2,699, plus \$99 for a 15-inch LCD, you can get a dual-667 MHz G4 PowerMac with 1 MB Level-3 cache per processor, and a GeForce 8MX card. Match the \$300 Apple rebate, the PowerMac comes to \$3,338. For about \$500 extra, the PowerMac/LCD combo gives you more than double the processor power, double the graphics performance, dual display support, and more expandability.

The low and mid-range G4 configurations will be available in stores possibly by the time you read this. The dual 1.25 GHz model will not be available until mid- to late September. All new PowerMacs include both Mac OS X 10.2 and OS 9.2.2 on the hard drive, although they will boot into OS 10.2 by default.

New iMac with SuperDrive announced

At the same time it released the new PowerMacs, Apple made some slight changes to its iMacs and eMacs. The iMacs changed in price only, but the eMacs gained a new configuration and is now available in two models, which may serve to further confuse the iMac buyers.

Apple has dropped the cost of its iMacs back to the prices it set in January, when

the flat-panel models were introduced (The prices had been increased due to the rising cost of LCDs and RAM—both of which have since come back down.) The prices are now \$1,999 for 700 MHz with CD-RW, \$2,299 for 700 MHz with CD-RW/DVD combo, and \$2,799 for 800 MHz model with a CD-RW/DVD-R SuperDrive. The 17-inch widescreen model, which is still in short supply at many retailers, remains at \$3,149.



The \$1,699 eMac now comes standard with a CD-RW/DVD combo drive, instead of a CD-RW. This is a great change for those waiting a home computer with DVD playback. However, there is now an even better eMac with a standard

SuperDrive and an 800 MHz G4 CPU for \$2,899. This is where things can get a little confusing: a \$2,799 iMac used to be the cheapest Apple computer that included DVD burning, but the feature can now be found on a \$2,299 eMac even though it is not yet available on the lower iMacs.

It seems to be Apple's goal to bring DVD burning to the mainstream the way it brought widescreen to the masses with iMac G4. Still, it seems odd that the lowly eMac gets DVD burning before the much more expensive and powerful G4 PowerMac. This seems a solid indicator that the PowerMac G4 will be the next machine to include DVD burning—at least as Apple can find a slim enough SuperDrive.

The eMac models currently available in the retail channel are \$1,699 for a 700 MHz G4 with 128 MB RAM, 60 GB hard drive, and CD-RW/DVD combo drive, and \$2,299 for an 800 MHz G4 with 256 MB RAM, a 60 GB hard drive, and CD-RW/DVD-R SuperDrive.

All iMacs include OS X 10.2 and OS 9.2.2, as well as the standard bundle of Apple software. Both new iMac models are expected to be available by press time. □

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< PLATFORM NEWS >

Virtual PC for Mac does Windows, Linux, OS/2

By Peter Millburn

It is not always the sleekest form of history for Macintosh users, Connectix's PC-based operating system emulator called Virtual PC is more a matter of convenience and practicality.

In 1997, Virtual PC debuted in the Macintosh market alongside long-time predecessors SoftWindows and RealPC. Since that time it has become a benchmark for the development of virtual machines and is overwhelmingly the most-used software in its category.

So what exactly does Virtual PC do? In short, a simple free installable software installation from CD will allow your Mac to run any flavor of DOS, Windows, Linux, Unix, or OS/2 that would normally run on Pentium-based hardware. Connectix also sells "OS boxes"

Continued on page 25



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Less need for keyboards on Pocket PCs

Handheld computer users have long wrestled with an intriguing set of trade-offs: size versus weight, form versus function, battery power versus computing power, and keyboard entry versus voice or pen data input.

On the latter issue, there have been many different attempts to create handheld computers that effectively bridge the gap between size and capability.

Pocket PC devices have been designed to provide maximum computing power without a keyboard by offering users a variety of ways to enter information including an on-screen keyboard and handwriting-recognition applications.

As a screen handheld computer user and a recent convert to the Geopaq iPaq, I have found this machine is equipped to do a great deal of everyday note taking,

email management, address book maintenance, and spreadsheet updating work.

But, when I really need to get a lot of information into an app quickly and accurately—doing things such as writing this story—I have found that it's pretty slow if I have to use the on-screen keyboard or the Transcriber handwriting-recognition software, as good as it is.

Enter the Targus Sweeney keyboard for the iPaq. I've written about the Sweeney before—it's also available for Hewlett-Packard's Jornada and various Palm handhelds.

It's one of these convenient, fold-out keyboards that attaches to the iPaq and gives me the chance to type as quickly as I could on a desktop or notebook computer keyboard.

When folded up, it is almost the same

size as the iPaq.

Well, almost. Because the interface at the bottom of the iPaq 3600 series is a little different from that of other iPaq systems—you have to clip a small connector connector into the Sweeney to allow the iPaq to fit properly.

While this seemed to work well, my concern was that this connector is small enough to be easily lost, plus you have to keep it with the keyboard or the iPaq at all times. (I suspect, however, that this is more a retooling issue for Targus than anything else, and that the next batch of Sweeney keyboards for the iPaq 3600 series will not require a connector.)

The other quibble I had with the keyboard was that it took a while for the letter "H" key on the keyboard to loosen up enough so that I could rely on it being

reproduced on screen.

The key seemed stiff initially, so that typing "the" would always come out as "ts" with us, the problem went away.

I guess the real question is whether or not I would buy this keyboard. At around \$148, I think it's worth it.

However, I would offer some advice to potential purchasers: make sure you really do need to carry out some heavy-duty typing on your handheld before plunking down any cash.

For most tasks, the on-screen keyboard and Transcriber software will do the job. But then again, the keyboard was good enough to let me write this entire story on it, something that would have taken a lot longer otherwise. And that has to be worth something.

—Geoff Rutherford

Getting ready for USB 2.0, UML, LSM

Continued from page 60

It" that have smaller connectors. In order to connect your computer to play with USB 2.0, you'll either need to get a USB 2.0 PCI card, or a new motherboard with USB 2.0 built-in.

For more details about the wonders of USB 2.0, and how to make use of it in Linux, point your Web browser to www.linux-usb.org/usb2.html.

Kernel 2.6 looks over the horizon

While you won't see Linux kernel 2.6 tomorrow, it's coming soon enough. A release of adding new features to the current experimental kernel, 2.6.x, is due to go into effect on Oct. 31. Some of the new features are aimed at the enterprise Linux market, as most users and even

companies probably aren't desperate enough to get to tasks larger than 2.38 (yes, that's twilight!).

Two of the "big" additions will be User Mode Linux (UML) and the Linux Security Module (LSM). The folks who love UML (your modems/acoustic modem and serial stuff) are beta testers. Folks too curious about the operating system's internals for their own good, and anyone who might want to set up a virtual Linux machine so they can play to their heart's content, without later finding that their own Linux has no longer functions properly.

Other people who'll love UML are those who worry about their network servers being broken into and abused. With UML, virtual hosts can be kept in their own little sandboxes, barred from doing anything

nearly to the main machine.

LSM (pronounced "leem") deals with the issue of access control, which would give the security community the ability to set up a far more fine-grained set of security controls than is possible with the traditional supervisor-non-supervisor, and peripherals setup. LSM isn't so much a new way of doing security as it is a set of hooks that allow those who write security modules to interface properly at the kernel level.

How LSM actually works is something that those who write the special security modules will have to worry about. From the user's point of view our worry is learning how to make proper use of the modules themselves.

There are a number of modules currently under development, and they're all

included on the LSM page listed above. A particularly useful one may be LSMs, the Linux Intrusion Detection System (www.linux-ds.org).

This and that

There's another changes in the works, too. A cleanup of the way the kernel handles virtual memory, a reorganization (or final reorganization) of device driver handling, serious maintenance on both the JRE and SCSI subsystems and more. There's never a slow day at the Linux kernel team's mailing list. For that, many enthusiasts are grateful. ☐

Geoff Rutherford has written more than 10 computer books, many articles, and taught dozens of classes involving Linux and its programs. You can reach him at geoff@rutherford.com.

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The future of digital radio New portable devices may signal format's breakthrough

By Peter Tupper

This year, the availability of new portable digital radios could finally see the widespread use of digital audio broadcast (DAB).

DAB provides near-CD quality sound and can include associated information, such as song artist and title, sports scores, or stock quotes, which can be displayed on the receiver's screen. It uses the Eureka 147 format, the standard for digital wireless broadcasting in Canada, Europe, and much of the rest of the world.

This new form of broadcast—which is supposed to replace AM and FM, eventually—is already in use. Radio stations in Vancouver, Montreal, Toronto, and Windsor have been broadcasting in DAB for years.

DAB receivers will not work in the United States, however. DAB broadcasts in the Eureka 147 format use the L-band (200 to 1,500 MHz), which in the U.S. is reserved for military use. Instead, American broadcasters have invested in HDRC (In-Band, On-Channel), a largely theoretical format that transmits digital



signals in the regular AM and FM bands.

DAB receivers are already available in Europe and Canada, with home and car units starting at about \$750 (converted from 500 euros).

This will be the year handheld DAB

devices hit the market. The U.K. firm Rike Manor Research (www.rmr.co.uk) has created a PocketDAB prototype, based on the credit card-sized Gold Card II circuit, which will be licensed to other companies for production.

Continued on page 28

My eBay summer: Part I

A first-time vendor recounts his online auction adventures

By Jeff Evans

Ever since I first heard about eBay in 1996, I have been intrigued and fascinated by this giant online garage sale. I heard stories of people selling old baseball cards and undershorts for enormous sums, 22-year-olds ransacking my million-dollar tube buying sports cars and airplanes, and baby boomers desperately seeking obscure trinkets of their childhood: rare Barbie dolls, Scooby-Doo lunch boxes, and the like.

I went onto www.ebay.com and to Canadian sites, www.ebay.ca a few times, for journalistic purposes, and found it endlessly vast and deep, and confusing. So much stuff! I wrote periodically about eBay because of my interests in Internet search technology and its e-

Continued on page 38

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The future of digital radio

Continued from page 64

Personal Telecom Inc. (www.ptel.com) debuted two DAB portables at CeBIT 2002. However, Germany's several high-tech tradehow and exhibition, the DAB-Hi, a hybrid FM/DAB receiver, and the DAB-201, which adds MP3 playback ability. The DAB-201 is expected to retail for approximately \$488 (converted from 325 euros).

Zoopad, Inc. of Ayer, Ont. (www.zoopad.com), will release a portable called Amara, a combination DAB receiver and MP3 player, with a multi-line display for song titles and other

data called "songids," which notes the artist and label of a track being accessed and uses the list for download to a PC via a Palm-like cradle. The unit carries a suggested retail price of \$299 making it comparable to regular MP3 players/MP3 car combinations, and Zoopad plans to have it in Radio Shack and other retail chains this fall.

The song remains the same

However, the ongoing revolution in technology will not bring with it an accompanying change in content. DAB receivers pick up the same advertising spots, the same limited music playlists and the same homogeneity of talk and opinion as analogue receivers. Even though DAB 147 allows for multiple broadcasting of multiple channels in the same frequency, the Canadian Radio-television and Telecommunications Commission (CRTC, at www.crtc.gc.ca) is still applying regulations for analogue broadcast.

"Right now, the rollout of DAB is taking place under an existing policy from the CRTC, called the Transitional Digital Radio policy," says Richard Cavanagh,

Continued on page 66



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My eBay summer: Part I

Continued from page 64

ownership. It seemed to me to be a kind of search engine for physical objects. Millions of people put up their possessions for sale online, millions of others browsed through them, and many, many deals were made, generally to mutual satisfaction.

Ebay is one of the most brilliant uses of the Web because it expertly leverages what the Web does best: allow people to search for information and to communicate with each other.

As the dot-com bubble collapsed, eBay's star shone even brighter, as it turned out that the machine it had built actually generated real sales and real profits... a reality in the vapour world of dot-com silliness.

Then, my mom called and asked me to sell my dad's collection of 1,700 plastic model kits.

All of a sudden, eBay became a lot more real to me. Dad's collection was physically massive, over 200 large moving boxes full of plastic and brass model airplanes, ships, and vehicles, some dating back to the 1950s.

Dad had been a light plane pilot in his youth, and had enjoyed making flyable radio control models and plastic model kits as a hobby. He had accumulated his collection of kits, expecting to spend his retirement building them with his 36 grandchildren. Then, several years ago, he died early and suddenly of an aneurysm. Mom had stored the collection for six years before offering it to me to sell off.

Seventeen-hundred items is a lot.

Believe me. Fortunately, right after Dad died, a couple of his good friends made me a brief spreadsheet of the collection for him, listing all the model names, manufacturers, manufacturers' item numbers, item condition, and original prices, where known. Early attempts to sell the whole collection to hobby shops had come to nothing, but this catalogue would prove precious in the effort to sell it on eBay.

First, I did some research. I needed to know if there was a market for 1,700 model kits, and if eBay would be the way to go to maximize the value of the collection and minimize the risk of fraud and other hassles.

Using Usenet

I went onto the part of the Internet called Usenet to find plastic model kit hobbyists and get their opinions. If you have an Internet connection, you can get onto Usenet via your Web browser's Read News option (different browsers, select Tools/Read and News/Read News, then follow the prompts). You'll also need to have the name of your ISP's news server.

Once on Usenet, I typed the keyword "model" into the newsgroup search bar, and a link to a recreational newsgroup called modelrookie popped up, indicating there was a newsgroup for scale model makers, which had about 30,000 current messages in it.

I composed a simple email message, stating that I had nearly 2,000 vintage model kits for sale. I intended to start posting them on eBay, and I had a catalogue I'd be happy to send to any interested members of the newsgroup.

I received over 900 requests for the catalogue in a couple of days.

I converted the Excel file into a 200 KB PDF file, so that even folks without Excel could read it, and emailed it out to the responders to my message. Large volumes of mail started coming in, from people wanting to negotiate prices for one or two kits in the collection.

It seemed clear there was an eager market for the collection, if sold a piece at a time. It also seemed clear that if I tried to haggle individual prices with 1,700 strangers, I'd go nuts.

So, I quickly concluded that eBay was the only way to go, for several reasons:

- It maximized model puts each item up for view by all eBay visitors, and generally gives the seller the best possible price without having to haggle individually with buyers.
- It allows both buyers and sellers to remain anonymous until a deal is made.

It has many mechanisms to reduce the possibility of fraud, acting literally as an honest broker.

- It has an elaborate system of buyer and seller feedback, so you can see the level of satisfaction other eBay users have had dealing with any individual seller.

Getting onto eBay

I took the plunge, and signed up as a seller. I went to the eBay site, clicked on Sign In, and up popped a Register Now option, which I selected. A series of screens stepped me through registration, ending with me getting a unique user ID and password.

Privacy, personal info, barriers to trade. eBay would not let me register directly, or using my Hotmail email address (it required that I use the email address supplied by my ISP (Symphony). This is one of many filters to reduce fraud.

I was also required to give my credit card number. I thought long and hard as I've always resisted putting my credit card info online. However, as for a penny, so for a pound, so I did it and was accepted as a seller. I spent an hour sending off the seller-related info, and accepting the seller's and buyers' tools.

Ebay offers multiple ways to handle transaction payments. The most secure and convenient for both buyers and sellers seemed to be to use one of the Internet payment systems. I registered for both eBay's own PayPal (http://Paypal.com), a third-party Internet payments system. Once again, I had to give additional personal, credit card, and banking info.

Before signing onto the payment systems, set up a special savings account with my bank for eBay business. I gave eBay and PayPal the information and was confirmed as a PayPal and PayPal customer.

Finally, it was time to sell. I looked through the catalogue for some interesting items to start with. I chose a Secret German Bismarck, with U-boat Penn, Panzer Group, Air Group, and Fockewulf. It included combat histories, and even some coastline—where did people think up the stuff?

I wrote my first ad copy, listing all the features, and ending with "Unique,

Continued on page 30

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Mozilla extensions to CSS: Part II

By Keith Schoepf-Roberts

In the previous article in this series, we looked at some Cascading Style Sheet (CSS) extensions introduced under the most recent versions of the Mozilla browser, whose "core"—called Gecko—is shared by Netscape Navigator 6.0 and the forthcoming version 7.0. The interesting thing about these extensions is that many of them are a "heads up" as to what you can expect to see in the forthcoming CSS3 specifications, so these Mozilla extensions make for a great excuse to go taking a look at some interesting interface-related properties you can expect to utilize—hopefully—in all browsers in the future.

If you plan to try these out, keep in mind there is no guarantee they'll work. But they are there, and provide a glimpse of future CSS3 properties.

Fighting with user input

One of the properties to be introduced

in the CSS3 specification is `user-input`, which is designed to allow a Web author to specify whether a given user interface element (like a button, or a form field) can accept input from the user. The principal reason for having such a property is to selectively enable or disable aspects interactively.

For example, say you have a form where you are setting the user's address—if the user lives in a city, you might want to disable a rural route setting. If the user lives in a house, you might want to disable a post office box field or an apartment box field selectively—the `user-input` property will enable you to do these things.

The `user-input` property can take one of four values: `none`, `enabled`, `disabled`, and `inherit`. The `none` value ensures that an element is not available for user input, and the `inherit` value uses whatever inheritable value may be present. The `enabled` value allows for user input on an element, and `disabled` does the opposite.

The following code snippet shows how this could be put to use:

```
<input
  type="text"
  user-input="none">
  user-input="enabled">
  user-input="disabled">
  user-input="inherit">
```

The idea would be to add programming code that could selectively enable and disable individual input elements on the page using these values of the CSS3 code.

This is how things should work according to the latest draft of the CSS3 specification. If you wanted to give this code a try in Mozilla, all you have to do is tack on a "user" to the end to be able to give it a try.

Modifying the user? Not quite...

Mozilla also includes another CSS3 preview property in the form of `user-modify`, which is designed to allow Web authors to set which fields in a form can and cannot be modified by the user. At first this may seem like an odd concept, but it allows for fields that can be "pre-

filled" programmatically and can be seen by the user but not changed. This differs from a setting like `user-input` disabled in that the user can select a form element and copy its contents if necessary.

This property takes one of four values: `readonly`, `read-write`, `write-only` and the ubiquitous `inherit`. The `readonly` value allows the user to see but not change anything, `read-write` (which would be the default) gives the user full control over adding or changing input. The `write-only` value is an anonymous setting, which only allows the user to select and edit the contents, but not see what they are or copy them out. So this ought to behave in much the same way as current password fields do (each character typed is as displayed as an asterisk or an equivalent character), though one has to wonder how a parent could effectively "nurf" such a field, say by moving its contents and re-writing them.

The following code snippet shows how this property could be put to use:

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Maxilla extension to CSS: Part II
Continued from page 98

If you wanted to try this out on Maxilla, simply replace `isselected` in the previous code sample with `isuserselected`.

What you need to focus

CSS3 is currently set to deliver a set of user-focus properties, which are intended to give the Web author greater control over what can happen to an element when it is has been given focus by the user. The `user-focus` key property is there to

determine what happens to an element when a user specifically clicks on it using their mouse, and `user-focus-pointer` determines what happens to a given element when a user "points" over to it. The `user-focus` property acts as a shorthand property, incorporating all of the functions of `user-focus-key` and `user-focus-pointer`.

They all share the following eight properties: `auto`, `normal`, `select-all`, `select-before`, `select-after`, `select-start`, `select-end`, and `select`. The `auto` value is whatever the default value is for a given element, and

`select` takes on whatever parent value may be present. The `normal` value means that when an element acquires focus, it does nothing else. When `select-all` is used, the whole of an element's contents are selected (this could be text within a text field, for example).

When an element is selected that was `select-before`, the cursor appears at the beginning of the contents of that element, and when an element uses `select-after`, the cursor appears at the end of the content of that element (again, think in

terms of a text field to get an idea as to why these values would be used). When `select-start` is used, whatever element last had focus is given focus again. The following code snippet shows how these might be put to use:

```
<style>  
input:focus {user-focus: select-before;}  
input:focus {user-focus: select-after;}  
</style>
```

Presumably you could set the tabbing behavior for an element to be different

Continued on page 105

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Virtual PC for Mac does Windows

Continued from page 28

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Virtual PC takes a unique approach to OS emulation. Rather than trying to mimic a PC-based OS, Virtual PC instead emulates all the components of an actual-based PC hardware architecture in software. Not only does that allow you to run genuine versions of foreign OSes on any G3- or G4-based Apple hardware, it also opens up the opportunity to run their native applications concurrently with those that run natively on Mac OS 9 or X.

This begs the question as to why any one would want to run these foreign applications on a Mac? After all, there are tens of thousands of native Mac applications for OS 9 and thousands more native to the more recent, adage, and modern OS X. There are also several Mac-native versions of Lotus, such as Lotus 123, Deluxe, Yellow Dog, and 5052. Furthermore, most mainstream

applications (particularly those on Windows), usually have equivalent or superior alternatives on the Mac.

The answer lies in the ability to run specialty or custom applications, particularly those that need to incorporate environments where the Windows platform dominates.

Also, consider that there are tens of thousands of custom and commercial DOS-based applications that are still used today by many firms. For example, a company I do contract work for uses a DOS menu-driven, order-invoice-inventory system called Business Vision. Virtual PC allows me to use my company platform of choice and save the company the expense of having to purchase additional computers.

Version 5.0 of Virtual PC brings with it a host of improvements and innovations. Fast and foremost is full OS X-native compatibility. Add to this the ability to set up and run as many virtual machines as you desire (or as many as your RAM and hard drive space allow). It is possible

to set up and launch separate windows running Windows 98, XP, Linux, and OS/2 concurrently with OS X (and OS 9 in the classic compatibility environment). It's a demonstration that will make the eyes of any user-gEEK pop out of their sockets.

In earlier versions of Virtual PC, you had to decide in advance how much hard disk space you wanted to assign to a virtual machine. If you ran out of space you'd have to use a bandaid utility to expand it further. This is no longer required as all disks expand dynamically as needed.

Virtual PC is also now capable of sharing the same IP address between any of your virtual machine setups and the Mac. This means that Web browsing and file sharing can happen concurrently in both the Mac and alternate OS environment. However, one major drawback with Virtual PC is that you can only browse Windows volumes and directories from the virtual machine—the virtual machine's file system is not access-

ible from Windows hardware.

What about the performance issues of emulating PC hardware on a Mac-based system? Obviously, widely varying depending on what hardware is being used and which foreign applications are being run. Obviously, newer and faster hardware will make Virtual PC more responsive, as will older versions in opposed to newer versions of more native OSes.

Also, forget about running 3D games that are unavailable for the Mac. Connectix just isn't able to justify devoting programming resources to emulating the numerous 3D cards that would make a better gaming experience. You'd be better off buying an inexpensive PC to play PC native titles.

One area in which Connectix has made huge improvements is in the boot-up process. As you quit Virtual PC, you are asked if you would like to "save the state" of the virtual machine to your hard disk. You can even do this before quitting any active applications. The next

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< ONLINE & CONNECTED >

Virtual PC for Mac does Windows

Continued from page 35

time you start up the operating system it loads the last saved state and will take only a few seconds to launch.

Obviously, there are many other factors that can affect performance. All I can vouch for with certainty is that Business Vision and Quick Basic run with more than acceptable responsiveness on hardware as minimal as a 500

MHz G3 portable. My advice to anyone interested in purchasing Virtual PC would be to download the 30-day trial version from Connectix's Web site and test it with the application you plan to run. Only then can you decide if it will meet your expectations. □

Peter Milburn is a systems integrator with Ete Systems Support in Calgary, Alta. He can be reached at etec.peter@telus.net.

Virtual PC for Windows

Connectix recently came up with a brainwave: augment Virtual PC for Macintosh sales with a version of Virtual PC for Windows. For Windows you say? Why on earth would anyone want to run multiple versions of Windows on native PC hardware? Well, if you think really hard, there are several good answers.

For example, what if an IT professional needed to support several versions of a Windows operating system in an organization? Wouldn't it be more efficient to install all of them on one machine if you had the memory and storage resources? Also, what if you wanted to test a newly released operating system before deploying it?

The benefits are also clear for software developers who want to debug and test applications for more than one platform and don't want to purchase additional machines. And, I think you'll agree that one of the greatest advantages is being able to undo changes to drive images after an event installation or virus attack. You can revert the virtual machine to a state in which it was functional, saving hours of labor.

Keep in mind too that, unlike the Macintosh version, you're not incurring a performance penalty that comes with emulating PC hardware.

—Peter Milburn

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Careers & Training

IT Career Trends • Productivity Tips & Tricks • Book Reviews • Tutorials

Wanted: Techie with closing skills

By Sharlene Myers

When it comes to marketing highly technical products to a worldwide customer base with varying business and technology requirements, the knowledge and expertise of a tech-savvy salesperson can be critical to a company's success.

BitFlash Inc., an Ottawa-based company founded in 1997, produces mobile scalable vector graphics (SVG) tools that allow multimedia developers to format content so it can be viewed on a range of mobile wireless devices.

The complex wireless industry, with its revolving door of standards and devices, can be especially daunting for those who fail to sell their products well, and many companies have come and gone with scarcely a ripple.

Nick Debonato has been with BitFlash since its inception, and is a veteran of four startups with varying levels of success. Having known since he was quite young that he was destined for a career in technology, Debonato says he studied modern languages in university because he "wanted to study something completely unrelated for variety." Ironically,

Career Profile



Nick Debonato
Titles: Senior Product Strategist, Business Development
Company: BitFlash Inc., www.bitflash.com

he says he "unwittingly learned valuable skills directly applicable to technical sales and marketing."

Recently, Debonato talked with TCP about working in technical sales and marketing. Following is an edited ver-

sion of that conversation.

TCP: Tell me about your first experience with computers.

Well I was about nine, and I got a Times Senior 2300 for my birthday. *Continued on page 58*

Employee training for small businesses

Is lack of employee training holding your small business back from getting real productivity gains from technology? If so, what can you do about it?

By Geoff Wilsenright

Training is all-important to the successful use of technology in a small business. The less someone knows about the tools at their disposal, the less they'll be able to do with them. It seems pretty obvious. The real issue around training is not whether your employees will benefit from training, but what kind of training is appropriate.

On-the-job training

Unfortunately, so-called "on-the-job" training is often an excuse for no train-

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< CAREERS & TRAINING >

Wanted: Techie with coding skills

Continued from page 37

and was instantly entranced by it—wanted to learn everything about it, figure it out as quickly as possible, so that I could write video games that didn't require quarters.

What does your job involve, what do you do?

I'm responsible for business development currently in Western Europe, which is one of our primary markets right now, just due to the nature of the technology we have. I'm involved with building relationships with current and wireless operators, and handset manufacturers.

Tell me about a typical workday for you.

There's probably two main categories on the road and not on the road. When I'm in the office, typically I spend a lot of time figuring organizations out, to try and see who the right people are to speak with in target organizations. So, researching companies, their products, and how we could potentially fit in with them, and determining how important it is for them to be a customer from a strategic and also a profitability perspective.

On the road, of course, a typical day is back to back meetings, just like most companies, we want to make the most of our travel dollars, so it tends to be two or three meetings a day in different cities.

Who would you be meeting with?

Typically product management personnel, product architects, people who are basically responsible for designing the next generation of wireless handsets and network services. Sometimes it could also organizations that might be a CTO [chief technology officer] or sort of a thought leader, a senior technology person, or perhaps inside the organization.

Your job is to convince them of how your technology can work with them?

Exactly. I'm also involved in building presentations that are specifically geared towards particular types of customers or partners. I'm responsible for delivering those presentations, of course, making sure that I'm in a position to answer any questions that they may have, and usually those questions get very technical very fast.

So I have to have a very good handle

on both our own technology but also, probably even more importantly, I have to be able to understand the technologies that our customers are using so that I can explain how they can integrate our technologies into what they are using right now.

I have to have a very good handle on both our own technology but also, probably even more importantly, I have to be able to understand the technologies that our customers are using so that I can explain how they can... integrate our technologies into what they are using right now.

NOW.

How did you end up in the position?

Originally, it certainly wasn't my plan or intention to end up in the sort of business development/sales/marketing field. But generally in the organizations I've been involved with, there's been a very strong need for people who understand the technology side of things and who can communicate them to an outside party.

So, probably because of the languages training or education I've had, I was able to do that, and to convey our message to people on the outside can understand it. And simply because there was such a strong need, it always got pulled in those areas. People asked me to sit in [on] meetings with customers to help them explain what our products did.

What do you like best about your job?

Probably the challenge of stepping outside our own organization and trying to look at things from a customer or partner's perspective. It's very difficult to sort of fall out of love with your own products [but] a lot of technical people or engineers... it's difficult to broadly look at something you've been involved in the development [of] with a critical eye, and to determine not only what's great about it, but also potentially what are its weaknesses. And [then] presenting it in a light that both accurately and tactfully conveys what it is, but also really underscores its strong points and value from a customer's perspective, which might be very different from what

you perceive as an internal person as the most powerful features of your product.

And what do you like best about it?

The travel can get a little bit tedious. I'm probably out of the office on average of anywhere from five to 10 days a month.

Do you go back to the same cities every month or so, or are you going to different places all the time?

Currently, it's a pretty wide variety of locations, mostly in Europe, sometimes in the States. Typically in one trip I'll have meetings in three or four or five different countries, so France, Spain, Germany, U.K., [and] Holland.

The meetings themselves originally I found were very tiring... but once you get the hang of that, that becomes a little less tiring, but the travel itself between cities—the long flights—can be somewhat tenuous.

What sort of challenges do you expect to face in your position or industry in the next couple of years?

In my position, I feel like I'm very much still making the transition from a technical person to more of a sales and marketing person—I probably have a ways to go. But ultimately, that's probably what I enjoy the most... and there's a lot that's new to me in the sales/marketing fields. The challenges will be continually improving those sales and marketing abilities and learning to think more and more like a technical sales and marketing person.

And for the industry itself, it's no secret that wireless space and the telecom space in general is very weak, so that's posed some challenges for us. But things are starting to get easier as the industry starts to pick back up again.

What would you consider to be the most important skills or qualities that someone would need to do your job?

First and foremost, because of the type of products and technologies we've developed, you have to know the technology inside and out. It does into a lot of people who are responsible for promoting and selling very complex technical products into very complex technical markets, to very sophisticated customers, who basically just can't talk at their level, and I think that frustrates customers. They have questions that

Continued on page 103



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Wanted: Techs with closing skills

Continued from page 37.

ing at all. It can be a key to get someone working right away, giving them a few minutes to understand some very basic technology functions and then letting them discover whatever else they wish to discover on their own.

The flow in this strategy is that it does not guide the discovery process—or even ensure that there is one. While it is quite understandable to question why an employer needs to be taught more than the functions you think they need to know about in order to do their job, the fact is that some employees want to be able to contribute more, to do more—and to make better use of the tools available to them.

If all you teach them is the mini-manual—and you offer no further guidance in how they should train themselves while they are on the job—they will draw their own conclusions and may spend time teaching themselves how to do things that have no applicability to their job.

Start by thinking about your business and its goals, then—if you're set on the idea of employees learning while they are on the job—direct employees to learn about applications for the technology that you yourself have not yet had the time to explore. Let's say, for example, that you would really like to do a mailing to all your customers about a new service you want to offer. The only problem is, you don't know how to do a "mail merge" from the addresses in your Microsoft Outlook address book to the letter you've created in Microsoft Word.

Get your employee to learn how to do that. It will not only get the job done, and ensure that you have broadened the skill base of your staff, it will also make your employee feel like he or she is making a real contribution to the organization.

Selecting an online training solution

There are also a lot of online training offerings available to help employees learn how to better make use of technology—everything from basic office productivity applications to network management, to Web development and data-

base design. Before selecting any such training solution for your staff, work with them once again to focus your business goals and learn a little more about your employee's personal achievement goals.

A good strategy here is to allow employees—once you have met with them and discussed these goals—to come up with their own online training strategy. You can let them do their own research, their own due diligence, and then make a business case for spending the time and resources to have them do the course.

Classroom training

There are also a lot of options for those who want to send their employees on dedicated courses outside the office. While these can be more expensive and are obviously less flexible than on-the-job training or online training, they do have the advantage of encouraging focus by employees. If employees know that they are safely supposed to focus on training for the period of the course, they may absorb a great deal more than if they try to fit in training around fluctuating moments of "down-time" at work and at home.

As an employee, you need to make sure that the training you are going to pay for will yield a benefit for your small business—unless the training is an employee reward for having achieved some pre-defined target or goal. Ideally, it should be a mix of the two. Outside training can be a strong statement of your belief in an individual employee, and having it linked to a reward for achieving certain targets may, in some circumstances, be very appropriate.

Take time to assess results

Finally, you need to be patient in assessing the results of your employee technology training. As with anything, it may take time for an employee to fully absorb everything he or she has learned from the training—particularly if it took place in a classroom setting outside work and the employee then has to spend some time and brainpower figuring out how to apply what they've learned to their current work situation. □



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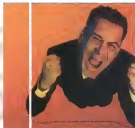
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Continued from page 67

The product also contains some other features previously available in other 01 Communications products, including video streaming—if you are on a remote connection with enough bandwidth and graphics capability, you can pop into your office through a camera connected to your desktop machine. This can be used either for security or for communication with whomever is on the other end (your family, for example, if you're not up I'm InTouch on a machine at home).

I'm InTouch will also work through a firewall, and a diagnostic tool available in the program simplifies such a setup. Additionally, you can run multiple I'm InTouch machines behind a firewall, as a Unique Computer Name is required to make the connection—that way two employees can keep in touch with their machines at work without problems. And for those who are concerned about the security of company data, all connections back to the corporate network use 128-bit SSL encryption to keep the data away from prying eyes.

Of course, there are potential drawbacks to the service. For one thing, your PC will have to remain on at all times when you're on the road, if you want to access your data. (This is only an issue if power consumption is a problem, or if your computer is located in an area where the computer has access could be

disturbing—for example, if a small apartment where the PC is located is a spouse awake at night while you're on the road.)

The biggest problem will be for users of handheld devices, especially cellular phones. The time needed to download the information from your home machine could be an issue for those using slower connections (many cell phones still transmit data at 56Kbps, which is a positive credential compared to broadband), especially when you start transferring larger text files.

Another problem is screen size—which using a remote PC at an Internet cafe would pose little difficulty: the smaller your screen size, the harder it will be to manage your data, forcing you to scroll through pages and pages of options in some cases. During a trial run, we were able to get to the data we wanted, but in some cases it felt like a marathon, especially on the tiny cell phone window.

As the speed of digital wireless networks improves with the introduction of the CDMA networks and the faster GSM/GPRS networks, speed will become less of an issue, though the size of the display will continue to be a problem. It's a small complaint considering the fact that I'm InTouch allows you to connect to your desktop at all—for the convenience of remaining in touch with your data, it's hard to imagine complaining too much about having to go through a few extra steps on a cell phone.

The software to be installed on the desktop will work on Windows 9x, Me, NT, 2000, and new XP Internet users can download I'm InTouch for a 30-day free trial. The software itself won't cost you anything if you decide you like it, but there will be a monthly subscription cost for using the Hits.com server (which you need to act up the peer-to-peer connection). A subscription costs \$9.95 per month, or \$99 for a full year. ☐

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